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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,675	07/15/2003	David Punsalan	200210251-1	9644

22879 7590 02/02/2009

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EXAMINER	
WANG, EUGENIA	
ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
02/02/2009	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID PUNSALAN,
PETER MARDILOVICH, and GREGORY S. HERMAN

Appeal 2009-0873
Application 10/620,675
Technology Center 1700

Decided: January 29, 2009

Before EDWARD C. KIMLIN, TERRY J. OWENS, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-18, and 55-65. Claims 66 and 67 stand withdrawn from consideration. We have jurisdiction under 35 U.S.C. §§ 6 and 134. Claim 1 is illustrative:

1. A method of manufacturing an electrolyte comprising:

coupling a substrate to a charged electrode; and

electrodepositing a polymeric electrolyte on said substrate.

The Examiner relies upon the following references as evidence of obviousness (Ans. 3-4):

Tanabe	5,002,647	Mar. 26, 1991
Steck	6,258,861 B1	Jul. 10, 2001
Takeuchi	2001/0014420 A1	Aug. 16, 2001
Schucker	2002/0172871 A1	Nov. 21, 2002

Appellants' claimed invention is directed to a method of making an electrolyte that has utility in a fuel cell. The method entails electrodepositing a polymeric electrolyte on a substrate that is coupled to a charged electrode. According to Appellants, they have "discovered that such an electrolyte reduces the likelihood of swelling in a fuel cell while increasing structural support" (App. Br. 3).

Appealed claims 1, 2, 4-18, 55, 57, 58, and 61-65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schucker in view of Takeuchi and Tanabe. Claims 2-7 and 60-64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the stated combination of references further in view of Steck. Also, claims 56 and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schucker in view of Takeuchi and Tanabe.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. In so doing, we concur with Appellants that the prior art applied by the Examiner fails to establish a prima facie case of

obviousness for the claimed subject matter. Accordingly, we will not sustain the Examiner's rejections.

Schucker, the primary reference in all the rejections, discloses a method of manufacturing an electrolyte by depositing a precursor of a porous substrate onto an electrically conductive substrate material, such as graphite, and then electrophoretically depositing an electrolyte material on the precursor of a porous substrate to form a green structure, which green structure is dried and sintered. As acknowledged by the Examiner, and emphasized by Appellants, Schucker does not teach that the electrophoretically deposited electrolyte material can be a polymeric material. Schucker teaches beta-alumina and $Na_3Z_2Si_2PO_{12}$ as electrolyte materials.

To remedy the deficiency in Schucker, the Examiner cites Takeuchi for teaching that the ionic conductive material for use as a membrane in a fuel cell can be the inorganic compound disclosed by Schucker or a polymeric compound, such as Appellants' perfluorosulfonate ionomer (Nafion). Based on the combined teachings of Schucker and Takeuchi, the Examiner draws the legal conclusion that "it would have been obvious to one of ordinary skill in the art to substitute a perfluorosulfonate ionomer for a NASICON as the electrolyte on the porous substrate of Shucker, because Nafion and NASICON are considered functionally equivalent ionic conductive material [sic, materials]" (Ans. Bridging 4-5).

The flaw in the Examiner's reasoning is that, although it may have been obvious to use a polymeric material to make an electrolyte for use in a fuel cell, Takeuchi provides no teaching or suggestion of electrodepositing the polymeric material on a substrate that is coupled to a charged electrode.

As stressed by Appellants, Takeuchi expressly teaches laminating polymeric ion conductive materials. While Takeuchi teaches that the polymeric laminate may be formed by "a spray method, a coating method, a dipping method, a spin coating method or another optional method" ([0187]), the reference provides no teaching or suggestion that the polymeric layer can be formed by the presently claimed electrodeposition method. Consequently, in the absence of some prior art teaching that it was known in the art to form a polymeric electrolyte by electrodeposition, the Examiner's legal conclusion of obviousness lacks the requisite evidentiary basis. The Examiner cites Tanabe and Steck for teachings other than electrodepositing a polymeric electrolyte on a substrate.

In conclusion, based on the foregoing, we are constrained to reverse the Examiner's rejections.

REVERSED

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